

**EXTRA WORK SHEET ON RELATION BETWEEN THE ZEROES AND FRAMING THE POLYNOMIAL.**

**Question 1** If a and b are the zeroes of the polynomial  $x^2 - 11x + 30$ , Find the value of  $a^3 + b^3$

- a. 134
- b. 412
- c. 256
- d. 341

**Question 2**  $S(x) = px^2 + (p-2)x + 2$ . If 2 is the zero of this polynomial, what is the value of p

- a. -1
- b.  $1/3$
- c.  $-1/2$
- d. +1

**Question 3** if the zeroes of the quadratic equation are 11 and 2, what is expression for quadratic

- a.  $x^2 - 13x + 22$
- b.  $x^2 - 11x + 22$
- c.  $x^2 - 13x - 22$
- d.  $x^2 + 13x - 22$

**Question 4**  $p(x) = x^4 - 6x^3 + 16x^2 - 25x + 10$

$$q(x) = x^2 - 2x + k$$

It is given

$$p(x) = r(x)q(x) + (x+a)$$

Find the value of k and a

- a. 2, -2
- b. 5, -5
- c. 7, 3
- d. 3, -1

**Question 5** A cubic polynomial is given below

$$S(x) = x^3 - 3x^2 + x + 1$$

The zeroes of the polynomial are given as  $(p-q)$ ,  $p$  and  $(p+q)$ . What is the value p and q

- a.  $p=1, q=\sqrt{2}$  or  $-\sqrt{2}$
- b.  $p=1, q=2$  or  $-2$
- c.  $p=1, q=1$  or  $-1$
- d. None of these

**Question 6.** If the zeroes of the quadratic polynomial  $ax^2 + bx + c$ ,  $c \neq 0$  are equal, then

- (a) c and a have opposite signs
- (b) c and b have opposite signs
- (c) c and a have the same sign
- (d) c and b have the same sign

**Question 7.**  $p(x) = g(x)q(x) + r(x)$

Find the value of  $r(x)$  and  $g(x)$  in each case

- a.  $p(x) = x^4 + x^3 + 2x^2 + 3x + 4$ ,  $q(x) = x + 2$
- b.  $p(x) = x^4 + 4$ ,  $q(x) = x^2 + x + 1$

**Question 8.** Find all the zeroes of the polynomial  $x^4 - 3x^3 + 6x - 4$ , if two of its zeroes are  $\sqrt{2}$  and  $-\sqrt{2}$

**Question 9.** If p and q are the zeroes of the quadratic polynomial  $f(x) = x^2 - 2x + 3$ , find a polynomial whose roots are:  $p + 2, q + 2$

**Question 10.** For what value of k, -7 is the zero of the polynomial  $2x^2 + 11x + (6k - 3)$ ? Also find the other zero of the polynomial

**Question 11.** What must be added to  $f(x) = 4x^4 + 2x^3 - 2x^2 + x - 1$  so that the resulting polynomial is divisible by  $g(x) = x^2 + 2x - 3$ ?

**Question 12.** Find k so that  $x^2 + 2x + k$  is a factor of  $2x^4 + x^3 - 14x^2 + 5x + 6$ . Also find all the zeroes of the two polynomials.

**Question 13.** Find the zeroes of  $2x^3 - 11x^2 + 17x - 6$ .

**Question 14.** If  $(x - 2)$  and  $[x - \frac{1}{2}]$  are the factors of the polynomials  $qx^2 + 5x + r$  prove that  $q = r$

**Question 15.** a, b, c are zeroes of cubic polynomial  $x^3 - 2x^2 + qx - r$ . If  $a + b = 0$  then show that  $2q = r$ .